

Claims

1. A method for implementing access restriction of mobile networks, comprising the steps of:

a Mobile Station (MS) inquiring a list of forbidden Public Land Mobile Networks (PLMNs) and access technology identifiers, which is saved by the MS, when the MS selects a PLMN network;

the MS determining whether the selected PLMN network and the access technology exist in the list of forbidden PLMNs and access technology identifiers, if they exist, the MS sending no Location Updating Request to a Mobile Switching Center/Serving GPRS Support Node (MSC/SGSN) of a Core Network; otherwise, the MS sending the Location Updating Request to the MSC/SGSN in order to access to the network.

2. The method according to claim 1, further comprising the step of: generating the list of forbidden PLMNs and access technology identifiers; wherein

the MS sends the Location Updating Request to the MSC/SGSN;

if the MSC/SGSN determines not to permit the subscriber to access to the network through the current access network, it returns a Location Updating Reject Message to the MS, with a reason value in the Location Updating Reject message;

the MS records the PLMN number of the access network and the access technology identifier which are forbidden to access in the list of forbidden PLMNs and access technology identifiers according to the reason value in the Location Updating Reject message.

3. The method according to claim 2, wherein the step of the MS recording the PLMN number of the access network and the access technology identifier which are

forbidden to access in the list of forbidden PLMNs and access technology identifiers further comprises:

the MS analyzing the reason value in the Location Updating Reject Message, and recording the PLMN number of the access network that the MS is located currently and the access technology identifier in the forbidden list of PLMNs and access technology identifiers if the reason value is “current access technology of PLMN is not permitted”; the MS recording the PLMN number and all the access technology identifiers in the list of forbidden PLMNs and access technology identifiers if the reason value is “PLMN is not permitted”.

4. The method according to claim 1, further comprising the step of: modifying the content of the list of forbidden PLMNs and access technology identifiers; wherein,

if the MS successfully accesses to a certain PLMN network through one access technology in a manual PLMN network selection mode, the MS determines whether the PLMN number of the accessed network and corresponding access technology identifier exist in the list of forbidden PLMNs and access technology identifiers saved by the MS; if they exist in the list, the MS deletes the access technology identifier corresponding to the PLMN number from the list.

5. The method according to claim 1, wherein the list of forbidden PLMNs and access technology identifiers comprises:

at least one group of access restriction rule data, wherein, each group of the access restriction rule data has five bytes, the first three bytes are used for storing the PLMN numbers, and the fourth and the fifth bytes are respectively used for storing the access technology identifiers.

6. The method according to claim 5, wherein one bit in each the fourth byte and the fifth byte represents one kind of access technology, with value 0 representing the access technology is permitted to access, or 1 representing the access technology is

forbidden to access.

7. The method according to claim 6, further comprising:

recording the access technology identifier in the list by setting the bit representing the access technology as 1; or

deleting the access technology identifier from the list by setting the bit representing the access technology as 0.

8. The method according to claim 2, wherein the list of forbidden PLMNs and access technology identifiers comprises:

at least one group of access restriction rule data, wherein each group of the access restriction rule data has five bytes, the first three bytes are used for storing the PLMN numbers, and the fourth and the fifth bytes are respectively used for storing the access technology identifiers.

9. The method according to claim 8, wherein one bit in each the fourth byte and the fifth byte represents one kind of access technology, with value 0 representing the access technology is permitted to access, or 1 representing the access technology is forbidden to access.

10. The method according to claim 9, further comprising:

recording the access technology identifier in the list by setting the bit representing the access technology as 1; or

deleting the access technology identifier from the list by setting the bit representing the access technology as 0.

11. The method according to claim 3, wherein the list of forbidden PLMNs and access technology identifiers comprises:

at least one group of access restriction rule data, wherein each group of the access restriction rule data has five bytes, the first three bytes are used for storing the PLMN numbers, and the fourth and the fifth bytes are respectively used for storing the access technology identifiers.

12. The method according to claim 11, wherein one bit in each the fourth byte and the fifth byte represents one kind of access technology, with value 0 representing the access technology is permitted to access, or 1 representing the access technology is forbidden to access.

13. The method according to claim 12, further comprising:

recording the access technology identifier in the list by setting the bit representing the access technology as 1; or

deleting the access technology identifier from the list by setting the bit representing the access technology as 0.

14. The method according to claim 4, wherein the list of forbidden PLMNs and access technology identifiers comprises:

at least one group of access restriction rule data, wherein each group of the access restriction rule data has five bytes, the first three bytes are used for storing the PLMN numbers, and the fourth and the fifth bytes are respectively used for storing the access technology identifiers.

15. The method according to claim 14, wherein one bit in each the fourth byte and the fifth byte represents one kind of access technology, with value 0 representing the access technology is permitted to access, or 1 representing the access technology is forbidden to access.

16. The method according to claim 15, further comprising:

recording the access technology identifier in the list by setting the bit representing the access technology as 1; or

deleting the access technology identifier from the list by setting the bit representing the access technology as 0.

17. The method according to claim 1, wherein the PLMN network is a Global System of Mobile (GSM) network, a Wideband Code Division Multiple Access (WCDMA) network, a Wireless Local Area Network (WLAN) or a Bluetooth network.